

WHAT IS CLAIMED IS:

- 1 1. A method of fabricating an image sensor, comprising:
2 forming a bottom antireflection coating over an exposed surface of an active
3 image sensing device structure;
4 forming a color filter array on the bottom antireflection coating; and
5 substantially removing exposed portions of the bottom antireflection coating.
- 1 2. The method of claim 1, wherein the bottom antireflection coating
2 comprises a dyed organic film-forming material.
- 1 3. The method of claim 1, wherein the bottom antireflection coating
2 comprises a light-absorbing polymeric film-forming material.
- 1 4. The method of claim 1, wherein the bottom antireflection coating has a
2 thickness selected to improve an optical transmission characteristic of one or more colors
3 of the color filter array.
- 1 5. The method of claim 1, wherein the bottom antireflection coating is
2 substantially transmissive to radiation in a wavelength range of about 400 nm to about
3 700 nm.
- 1 6. The method of claim 1, wherein the color filter array comprises a plurality
2 of colored photoresist structures.
- 1 7. The method of claim 1, wherein exposed portions of the bottom
2 antireflection coating are removed substantially by a plasma etch process.
- 1 8. The method of claim 7, wherein the plasma etch process is a low-power
2 buffered oxygen ash process.
- 1 9. The method of claim 7, wherein the plasma etch process removes the
2 bottom antireflection coating at a substantially higher etch rate than the color filter array.
- 1 10. The method of claim 1, wherein the bottom antireflection coating forms a
2 substantially continuous layer over the exposed surface of the active image sensing device
3 structure before exposed portions of the bottom antireflection coating are substantially
4 removed.

1 11. The method of claim 1, wherein the bottom antireflection coating forms a
2 protective barrier over metal structures at the exposed surface of the active image sensing
3 device structure during formation of the color filter array.

1 12. The method of claim 1, wherein the active image sensor device structure
2 comprises a complementary metal-oxide-semiconductor (CMOS) image sensor.

1 13. An image sensor system, comprising:
2 an active image sensing device structure;
3 a color filter array; and
4 a bottom antireflection coating disposed between the color filter array and a
5 surface of the active image sensing device structure.

1 14. The system of claim 13, wherein the bottom antireflection coating
2 comprises a dyed organic film-forming material.

1 15. The system of claim 13, wherein the bottom antireflection coating
2 comprises a light-absorbing polymeric film-forming material.

1 16. The system of claim 13, wherein the bottom antireflection coating has a
2 thickness selected to improve an optical transmission characteristic of one or more colors
3 of the color filter array.

1 17. The system of claim 13, wherein the bottom antireflection coating is
2 substantially transmissive to radiation in a wavelength range of about 400 nm to about
3 700 nm.

1 18. The system of claim 13, wherein the color filter array comprises a plurality
2 of colored photoresist structures.

1 19. The system of claim 13, wherein the bottom antireflection coating has a
2 substantially higher plasma etch rate than the color filter array.

1 20. The system of claim 13, wherein the active image sensor device structure
2 comprises a complementary metal-oxide-semiconductor (CMOS) image sensor.